

Reference #: AIP-1 Rev.1  
Initiation Date: 03-Oct-2023  
Engineer of Record: Sheila Zhang  
Altec Job #: 230875



Client: Double R (Macro Industries)  
Contact: Kris Calverley  
Equipment: A truck-mounted telescopic boom crane  
Manitex 45110T (Max. capacity: 35 tons), unit# 244  
(make, model, unit, SN#, etc.)

### Equipment Inspection and Certification Inspection Plan

(In accordance with Engineers & Geoscientists BC, Good Engineering Practices and/or Annual Equipment Inspection and Certification Guidelines, as applicable)

This "Inspection Plan" will form the basis of work to be completed throughout the inspection and certification process. It is a working document that will be completed by the Engineer of Record (EOR) as the necessary sections data/results are compiled. Sections will be completed in sequential order (Sections 1 through 4) unless otherwise instructed by the EOR. Data and results from each previous section will determine the depth of inspections required for the following section and ultimately the completion of the "Safe for Use" certification. Specific inspection requirements for each section will be communicated directly to the Client by the EOR and will be recorded in the "section notes".

#### Section 1 - Equipment History (documentation to be supplied by Client).

- ☒ Reviewed relevant equipment documentation.  
☐ Documentation was incomplete or unavailable for review.

Section 1 Notes: Placards, last inspection (was completed by other), stability to be completed

Section 1 completion date: 03-Oct-2023

EOR initials: SZ

#### Section 2 - Mechanical and Controls Inspection as per OHSR, applicable codes/standards and Manufacturers specifications. (Inspection report to be submitted to Altec Inspection Ltd. EOR by Client or representative of)

- ☒ Mechanical and Controls Inspection Reports - completed by qualified person  
Mechanical and Controls Inspection Report Reference ID: M-SZ031023-1

☐ Not Applicable

Section 2 Notes: All identified mechanical and control issues were corrected by Double R Repairs  
I am satisfied with the mechanical and control inspection report

Section 2 completion date: 20-Oct-2023

EOR initials: SZ

#### Section 3 - Structural Inspection as per OHSR, applicable codes/standards and best engineering practices. (Structural Inspection will be completed by Altec Inspection Ltd.)

- ☒ Structural Inspection Report - completed by qualified person  
Structural Report ID: S-SZ031023-1

Section 3 Notes: Disassembled boom inspection was completed on June 13, 2023. Disassembled load block (serial # 41397676) inspection was completed on June 30, 2023  
No significant structural deficiencies were noted at the time of inspection  
Stability test was completed on October 12, 2023

Section 3 completion date: 20-Oct-2023

EOR initials: SZ

#### Section 4 - Final Certification

- ☒ All documentation and inspections provided were found to be in compliance with the Engineers & Geoscientists BC, Good Engineering Practices and/or the Annual Equipment Inspection and Certification Guidelines. Issue "Safe for Use" certification.  
Certification (Report ID): C-SZ031023-1

☐ All documentation and/or inspections were not satisfactory. Certification cannot be issued.

Section 4 Notes: Please maintain documentation and equipment as per OEM, OHSR, & EGBC Guidelines  
Note: the maximum crane capacity was limited by the current load block capacity of 35 tons

Section 4 and self check completion date: 20-Oct-2023

EOR initials: SZ

OQM document review and acceptance.

Reviewed by:

Date: 01-10-2023

Document Rev. Date: May 5, 2021



## SAFE FOR USE CERTIFICATE

Inspection Plan Ref.: AIP-1 Rev.1

Report ID: C-SZ031023-1

**CLIENT:** Double R (Macro Industries)

**MAKE & MODEL:** Manitex 45110T (maximum capacity: 35 tons, limited by the current load block)

**SERIAL NUMBER:** 203928

**UNIT:** 244

**LOCATION:** Double R Repairs' yard, Fort St. John B.C.

**CERTIFICATE DATE:** October 03, 2023

**CERTIFICATE EXPIRATION DATE:** October 03, 2024

**STRUCTURAL INSPECTION REF.:** S-SZ031023-1  
Completed by Altec Inspection Ltd.

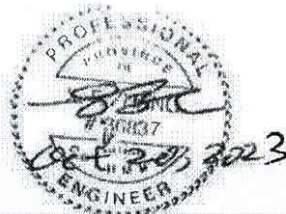
**MECH. & CONTROLS INSPECTION REF.:** M-SZ031023-1  
Completed by Owners Representative

The Structural Inspection and the Mechanical and Controls Inspection documents were prepared in accordance with the *Professional Practice Guidelines – Annual Equipment Inspection and Certification in British Columbia*.

Based on the information provided in the referenced inspection reports, it is my considered opinion that the above referenced equipment is Safe for Use within the OEM recommendations.

Any change to the "Safe Working Condition" of the equipment, will render this certification invalid.

The above has been completed as required by the *Occupational Health and Safety Regulations (B.C. Reg 296/97)*.



Xiu Feng (Sheila) Zhang, P.Eng

Qualified Engineering Professional of Record  
(in the Province of British Columbia)  
Altec Inspection Ltd. EGBC PP # 1001837

# ALTEC

SZ 031023-1 Inspection Ltd.  
Inspection & Engineering  
Contact: (250) 785-6295  
STRUCTURAL INSPECTION TAG

Make: Manitex unit # 244  
Model #: 45110T  
Date: October 03, 2023  
Ser.# 203928  
Inspector: EE



# ALTEC INSPECTION LTD.

## CRANE STRUCTURAL INSPECTION

Inspection Plan Ref. # AIP-1 Rev.1

Report ID # S-52031023-1

EQUIPMENT BACKGROUND INFORMATION			
CLIENT:	Double R (Macro Industries)		
DATE:	October 23, 2023		
MAKE / MODEL / CAPACITY:	Mastipex 4510 T (Crane Capacity 45Tm)		
SERIAL NUMBER:	203928 Limited by Local Block: 35t		
UNIT:	24th		
SCOPE of WORK:	<input checked="" type="checkbox"/> Annual Inspection <input type="checkbox"/> Modification Inspection <input type="checkbox"/> Repair Inspection	Equipment Type: <input type="checkbox"/> Articulating Boom Crane <input type="checkbox"/> Telescopic Boom Crane	<input type="checkbox"/> Tower Crane <input type="checkbox"/> Derricks <input type="checkbox"/> Other:
Acceptance Criteria (Codes / Standards):	<input checked="" type="checkbox"/> OHSR Part 14 <input type="checkbox"/> OHSR Part 16 <input type="checkbox"/> OHSR Part 20 <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> CSA Z150 - 1998 <input type="checkbox"/> CSA Z151 - 2009 <input type="checkbox"/> CSA Z248 - 2004 <input type="checkbox"/> ANSI/ITSDF 56.6 - 2011	<input type="checkbox"/> ASME B30.4 - 2003 <input type="checkbox"/> ASME B30.5 - 2004 <input type="checkbox"/> ASME B30.22 - 2005 <input type="checkbox"/> Other:
CRITICAL AREAS of INSPECTION (can include but are not limited to)		INSPECTION COMMENTS	
BOOM	<input checked="" type="checkbox"/> Main Boom <input type="checkbox"/> Other Boom Sections <input checked="" type="checkbox"/> Pins & Ears 7mm <input checked="" type="checkbox"/> Hooks ball head <input checked="" type="checkbox"/> Safety Latch 5/16 <input checked="" type="checkbox"/> Pin & Bushing 41302290	o/c o/c o/c o/c o/c o/c	
35Tm BLOCK & HOOK SN 41392076			
SHEAVES:	<input checked="" type="checkbox"/> Wear/Fatigue <input type="checkbox"/> Boom Sheaves <input type="checkbox"/> Hook Sheaves	o/c o/c o/c	
CABLE & GUIDES:	<input checked="" type="checkbox"/> Wear <input type="checkbox"/> Placement <input type="checkbox"/> Bushings	o/c o/c o/c	
TURRET or BASE:	<input checked="" type="checkbox"/> Welds <input type="checkbox"/> Bearings / Bushings <input type="checkbox"/> Pins & Ears	o/c o/c o/c	
PEDESTAL MOUNT:	<input type="checkbox"/> Flanges <input type="checkbox"/> Pins & Ears <input type="checkbox"/> Bolts & Spacers	o/c o/c o/c	
PLACARDS:	<input checked="" type="checkbox"/> Load Chart <input type="checkbox"/> Overhead Elect. <input type="checkbox"/> Control Levers	o/c o/c o/c	
CABLE / CHAINS / ROPE:	<input checked="" type="checkbox"/> Worn/Frayed <input type="checkbox"/> Lubrication <input type="checkbox"/> Winch Attach.	o/c o/c o/c	
UNDERCARRIAGE:	<input type="checkbox"/> Frame <input checked="" type="checkbox"/> Bolts	o/c o/c	
OUTRIGGERS	<input type="checkbox"/> Welds <input type="checkbox"/> Hydraulics <input type="checkbox"/> Frame Support	o/c o/c o/c	
OTHER COMMENTS: (repairs, recommendations, non-critical deficiencies, additional equipment observations, etc.)		Sensitivity test was completed on Aug 12, 2023	
NOTE: If the equipment is not fully disassembled some structural components may not be accessible to inspection.			
Additional EOR Structural Inspection Report to follow: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
INSPECTED BY:	sheila zhang (PRINT) (SIGNATURE)	Inspectors Qualifications: <input checked="" type="checkbox"/> Engineer and/or <input checked="" type="checkbox"/> CSA W178.2 Reg# 5100215 <input checked="" type="checkbox"/> CAN/CGSB 48.9712 MT2 Reg# 16426	
SELF-CHECKED BY:	sheila zhang (PRINT) (SIGNATURE)	Oct 20, 2023 (DATE)	
DIRECT SUPERVISION BY: (If applicable)	(PRINT) (SIGNATURE)	(DATE)	



# ALTEC INSPECTION LTD.

MECHANICAL AND CONTROL ELEMENTS INSPECTION

Inspection Plan Ref # AP-1 Rev.1

Report ID # SE 031023-1

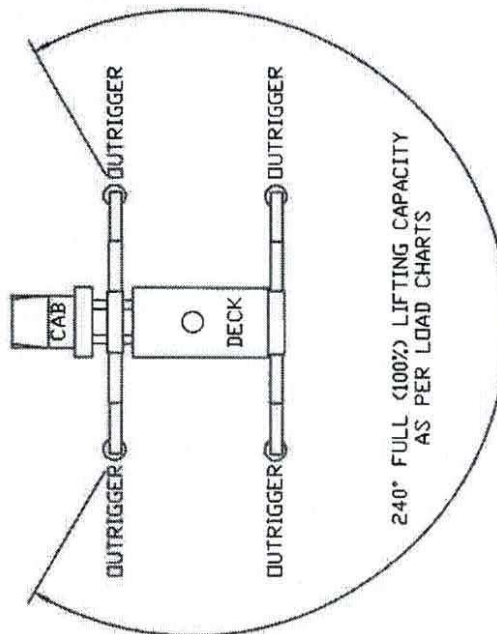
EQUIPMENT BACKGROUND INFORMATION		VEHICLE INFO
CLIENT	MACRO	
DATE OF INSPECTION	4 OCTOBER 2023	188231 KMS
MAKE / MODEL / CAPACITY	MANITEX 45110T	11061 HRS
SERIAL NUMBER	203928	INKD94TXDER967786
UNIT	244	
SCOPE OF WORK: (describe task and type of equip.)		
10 Year Tear Down + Yearly Inspection		
Mechanical & Controls inspection performed as per: (Identify applicable criteria)	<input checked="" type="checkbox"/> OHSR Part 12 (vehicle lifts, supports, etc.) <input checked="" type="checkbox"/> OHSR Part 13 (cranes, portable work platforms, etc.) <input checked="" type="checkbox"/> OHSR Part 14 (overhead hoists, cranes, etc.) <input checked="" type="checkbox"/> OHSR Part 16 (vehicle mounted equip., cranes, etc.) <input type="checkbox"/> OHSR Part 20 (concrete pump/placing booms) <input type="checkbox"/> Manufacturer's specifications <input type="checkbox"/> Applicable code/standard <input type="checkbox"/> Other	
In addition to the applicable OHSR, the specifications provided by the OEM, and any requirements of the applicable codes or standards, this Mechanical and Control Elements inspection is to be completed as required by the ALTEC INSPECTION LTD. inspection plan. Non-compliance (incomplete) documentation may be cause for non-issuance of a "Safe for Use" certification.		
AREAS OF INSPECTION (may include and are not limited to)	ITEM CONDITION ACCEPT / REJECT	INSPECTION COMMENTS (Please explain accept/reject or why not applicable. Please do not leave blank spaces)
General Condition of Carrier (operational components of vehicle: windows, doors, gauges, fluids, etc. - annual OHSR if appl.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	FW 39654
Performance of carrier power source (diesel, gasoline, gas, diesel, electric, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	11
Tire Condition / wheel mounting / steering / control arms / suspension / etc.	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	11
Condition / operation of clutches or braking systems and components (linkage, pawls and ratchets, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	11
General Condition of the Mounted Equipment (platform, crane, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK Came in 5 pieces Repair after accident.
Framing / Undercarriage (connections, bolting, welds, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK
Chargers (operation, connections, visible damage)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK
Turret / Base Connection (bolting torque, welds, tearing, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK New Turret Bolts, New Spring Brake
Pin / Gears / Rollers / Locking Devices (worn, cracked, distorted, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK New Main winch Lin.
Hydraulics / Air / Lubricating / Cooling (hoses, condition, connections, cylinders/rams, fluid levels, leaks, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK New Tele Hyd cyl + All Cables
Placards / Labels for Controls, Load / Lifting capacity, Warnings, etc.	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK New Boom Length Decals (boom)
Electrical components / apparatus (inspect condition and operation)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK New Control Panel (Custom Provided)
Mechanical Controls Function Checks (inspect condition then operation of all control mechanisms)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK 1st Tele Boom Bent + cut + Replaced.
Safety Devices (Anti-two Block / Limit switches / Warning lights or buzzers, load indicators, etc.)	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable <input type="checkbox"/> Not Applicable	OK AAB Not working + bypassed.
OTHER COMMENTS: (repairs, recommendations, non-critical deficiencies, additional equipment observations, etc.)		5 Year Block Tear Down 10 year boom. Perform Stability Test.
Regarding the inspected equipment, and in addition to the applicable OHSR, OEM specifications and any requirements of the applicable codes or standards, this Annual Mechanical and Control Elements inspection has been completed and found to be acceptable. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other Condition:		
INSPECTED BY	R Kris Calverley	Qualified Mechanic or Competent Personnel
(Qualified/Competent Personnel)	(PRINT)	(Signature)
I am familiar with the equipment, requirements of the applicable OHSR, applicable codes/standards, OEM documentation and any applicable building.		105689
EOR Acceptance: (Under Inspection Unit, Engineer of Record)		(Date)
Sheila Zhang		Oct 20, 2023
(PRINT)		(DATE)
I am satisfied that the Mechanical and Control Elements inspection was completed in accordance with the inspection plan, by a competent individual.		



# CRANE LOAD CHART STABILITY VERIFICATIONS

CRANE TYPE: COMBINATION  
OWNER: MACRO INDUSTRIES  
LOCATION: DOUBLE R REPAIRS' YARD, FORT ST. JOHN, BC  
DATE: OCTOBER 12, 2023  
CRANE MANUFACTURER: MANITEX  
MODEL: 45110T  
SERIAL: 203928  
CARRIER MANUFACTURE: KENWORTH  
SERIAL: 1NKDX4TX0ER967786  
UNIT: 244  
REPORT ID: SZ121023-2

DRIVER'S SIDE  
PASSENGER'S SIDE  
LIFTING NOT  
RECOMMENDED  
IN THIS AREA  
(NOT RATED/TESTED)

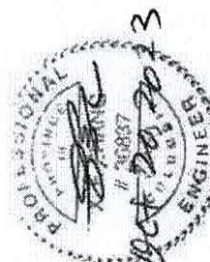


## NOTES:

THIS TEST SHOULD NOT BE CONFUSED WITH A DESIGN TEST AS WOULD BE GENERATED FOR CONSTRUCTION OF A CRANE ASSEMBLY IN ACCORDANCE WITH ASME B30.5/SAE J765.

THIS EQUIPMENT WAS CONFIGURED WITH THE OUTRIGGERS FULLY EXTENDED AND THE FRAME LEVEL. THE LOAD WAS VERIFIED AS STABLE GIVEN THE MANUFACTURER'S RATED LOADS FOR ABOVE NOTED 240° RANGE. WEIGHTS AND MEASURES CONFORMED TO THE REQUIREMENTS OF STANDARD SAE J765.

PROFESSIONAL ENGINEER STAMP(S)



**ALTEC**  
INSPECTION LTD.

EGBC PP # 1001837

TESTED	CHECKED
SHEILA ZHANG	SHEILA ZHANG
DATE	DATE
12.10.2023	12.10.2023
STABILITY VERIFICATIONS	